Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

we shall obtain the following results, which represent the total flexion and adduction, expressed as percentages, compared with each other.

	Total Flexion.	Total Adduction.
1. Cercopithecus mona,	17·57	22·62
2. ,, callitrichus,	14·26	17·79
3. Cynocephalus porcarius,	16·75	11·85
4. Macacus nemestrinus,	4·68	26·74

The relative proportions of the Glutæi muscles, in the smaller monkeys, I have found to be as follows:—

	Gl. max.	Gl. med.	Gl. min.
1. Cercopithecus mona,	31·6	61·6	6·8
2. ,, callitrichus,	25·9	66·0	8·1
3. Cynocephalus porcarius,	27·7	61·6	10·7
4. Macacus nemestrinus,	28·0	60·6	11·4
5. Lagothrix Humboldtii,	37·9	54·5	7·6

The PRESIDENT read the following communication from the Rev. EDWARD HINCKS:—

ON THE VARIOUS YEARS AND MONTHS IN USE AMONG THE EGYPTIANS.

THE author began by referring to his former paper on a similar subject, read before the Academy in 1838, and published in its "Transactions." The conclusions arrived at in that paper were, he observed, vitiated by a discovery made by Brugsch, that Champollion had mistaken the seasons of the Egyptian year; that the third season, which he had believed to be that of the inundation, was in reality the genial season; and the first season, which followed this, was the true season of the inundation. Fully recognising the importance of this discovery, and of others made by Brugsch, Dr. Hincks could not acquiesce in what he had put forward as his latest discoveries—namely, that the wandering year of 365 days was unknown to the Egyptians; and that the only years used by them through the whole period of their history were the sacred year, commencing with the rising of Sothis on the 20th or 21st July of our present calendar; and the civil year, commencing about forty days after. Each of these had 365 days in three successive years, and 366 in the fourth. The principal object of the present paper was to controvert these new opinions. He admitted the existence of such a sacred year as that of M. Brugsch; which, however, was not a discovery of his, but what all Egyptologers have long since recognised; but he maintained that the Egyptians had a civil year of 365 days since 2783 B.C., and that they never had a civil year with intercalations, beginning near the end of August, until after the taking of Alexandria by Cæsar Octavianus. In support of the first proposition, he appealed first to the testimonies of various astronomical writers, and of Censorinus. In the course of his argument he noticed the mistake which Brugsch had made respecting an astrological Papyrus at Paris, which he assigned to the *tenth* year of Antoninus, the real date being the *first* year of Antoninus; and the positions of the Sun, Moon, and Saturn noted therein being certainly those which they occupied on the 4th December, A. D. 137. This correction cuts at the root one of M. Brugsch's principal arguments. Dr. Hincks then digresses to the consular fasti, which, as generally received, are inconsistent with this date existing in a contemporary record. He points out a consulship in the reign of Vespasian, which has been, he thinks, improperly inserted, and one in the reign of Alexander Severus which has been improperly omitted. He then considers the testimony of S. Clemens Alexandrinus, whose dates respecting the birth and death of our Lord can have no significance unless the years which he uses were years of 365 days without intercalation. Admitting this, his dates of the birth and crucifixion of our Lord, of the taking of Jerusalem, and of the death of Commodus, are found to be dates of the wandering year, corresponding respectively to the 5th January, 3 B. C.; 7th April, A. D. 30; 2d September, A. D. 70; and 31st December, A. D. 191. The second of these dates, it is observed, is that of Bishop Ellicott. The double date on the Rosetta Stone is then considered; and it is shown, by a reference to Archbishop Ussher's work on the Macedonian Solar Year, that it is in perfect harmony with the Egyptian date, being that of the wandering year, and quite inconsistent with its belonging to a fixed year, such as M. Brugsch has imagined. Dr. Hincks then goes back to the time of the seventeenth or eighteenth dynasty, and endeavours to show that the Turin Book of Kings, which he refers to that period, recognises the wandering year of 365 years, as well as the year of 360 days, which is always meant in the Turin Papyrus when a year is spoken of. He observes that the 2291 years, four months, and twenty days, which the Papyrus gives as the length of the reigns of the sovereigns whom it enumerates, if they be reduced to days, at the rate of 360 in the year, give *precisely* 2250×365. He observes, also, that if 2260 be subtracted from 3555, which Manetho states to be the number of years between the accession of Menes and the final conquest of Egypt by Ochus, the remainder is 1295, the *precise* number of years which elapsed between the accession of the seventeenth dynasty and the conquest of Egypt by Ochus, according to the restoration of the text of Manetho which Dr. Hincks had put forward in January, 1863. He maintains that 1634 B. C. (1295 years before Ochus), is the *historic* date of the accession of the seventeenth dynasty; but demurs to the 2260 years alleged to have intervened between it and the accession of Menes, as it does not yet appear on what grounds this number was fixed upon by the Egyptians of the sixteenth or seventeenth century B. C. There is good reason, he says, for thinking that some kings mentioned in the Papyrus were contemporary with others; and, as yet, there is no proof that in making this calculation the Egyptians allowed for their being so. He observes that the seventeenth dynasty of Manetho is not represented in the Papyrus of

Turin, nor is any that follows it; but all the preceding dynasties, which the Papyrus recognised as real and distinct, have their kings recorded in it. The Papyrus, however, has only ten of the sixteen dynasties of Manetho—namely, the first, the second; the third and fourth, thrown into one; the fifth, the sixth, the eighth, the eleventh, the twelfth, the thirteenth, and the Shepherds. Dr. Hincks believes that the whole of the second, and the greater part of the first and fifth dynasties of Manetho, were contemporary with the third and fourth; and has great doubts whether the eighth and eleventh, and again the thirteenth and the Shepherds, were not to some extent contemporaneous.

The Sothic, or sacred year, is then considered; and it is shown that it began on the 21st July in the two years before the Augustan bissextile, and on the 20th in the bissextile year and that which next followed it. It began on the same day with the civil year in the four years, A. D. 134, 135, 136, and 137, deviating from it in A. D. 138, when the civil year began on the sixth of the epagomenæ. This was counted as the first year of the 3rd canicular cycle, the other two having commenced on the 20th July, B. C. 2783, and 1323. The Sothic year must have superseded the still older year which began at the summer solstice, or at the beginning of the inundation, when this event occurred at the heliacal rising of Sothis—that is, as very roughly calculated, about 3200 B. C.

The Egyptians had also, it is next observed, a lunar year, beginning at the new moon which next followed the summer solstice. This year was of very great antiquity, and was in use at the same time with the better known, fixed, and moveable years already spoken of. Dr. Hincks thinks that there was also a wandering lunar year, like that now used by the Mahometans, in use in Egypt. It seems to be referred to in some very ancient inscriptions, and also in the Calendar of Esneh, in which three days are mentioned as new year's days, and on that account observed as festivals. M. Brugsch only attempts to explain one of these; M. Mariette differs as to this from M. Brugsch, but attempts to explain a second. Dr. Hincks maintains that MM. Brugsch and Mariette have not only failed to explain all the commencements of years, but have given false explanations where they gave any. He explains all the dates as follows:—Supposing that the calendar belongs to the Sothic year which began 21st July, A. D. 103, the first day of this was a double festival, being the commencement both of the Sothic year and the regular lunar year. The ninth day of the year, 29th July, A. D. 103, was the first *Thoth* of the civil year; and the 296th day of the year, ten lunations after the first, was the commencement of the wandering lunar year, 11th May, A. D. 104. The 21st July, A. D. 103, was the neomenia, according to the Egyptians, the conjunction of the sun and moon occurring that evening. A Karnac inscription of the Ptolemaic period speaks of the moon god being conceived on the first day of the month, born on the second, and attaining his maturity, or beginning to decay, on the 15th. These three month dates refer, of course, to the conjunction, first appearance, and plenitude of the moon. The 16th of the lunar month was oftener than the 15th regarded as the day of full moon; and two monthly festivals, celebrated on the 1st and 16th, have been rightly referred by Lepsius to the lunar year.

Dates of the lunar year are, according to Dr. Hincks, occasionally met with on the monuments. Such dates are, he thinks, those of the 1st and 16th of Athyr, of the 11th of Amenhotap III., mentioned on a scarabæus, so as to imply that the Nile was then rising, and near its height. The date of the Exodus in the month Abib, presumably Epiphi, is also referred to a lunar year. The month Abib is identified with what was afterwards the first month of the Israelites, and was, therefore, like this, a lunar month; and we know that it was the month which began at the new moon following the vernal equinox. Epiphi was the eleventh Egyptian month; the lunar Epiphi would, therefore, begin more than 295 days after the solstice, while the vernal equinox was about 271 days after it. From this it follows that the first Hebrew month would in general coincide with Payni, the tenth Egyptian month; but that it would occasionally coincide with Epiphi—namely, when the new moon followed the summer solstice very closely. This would furnish a means of determining the year of the Exodus accurately, if it were known approximately; for example, 1491 B. C. could not be the year of the Exodus, but 1494 B. C. might. But, what is of more consequence, the remark respecting the month Abib is a very strong argument in favour of the genuineness of the Biblical account of the Exodus, which has been recently called in question. No forger of a later age, and who had not lived in Egypt, could have thought of making such a statement.

The President read a paper, by Professor Sylvester, "On the Demonstration of Newton's Theorem respecting the Imaginary Roots of Equations."

The PRESIDENT read the following paper, with a NOTE by the late Sir W. R. HAMILTON, LL. D. :--

ON A THEOREM RELATING TO THE BINOMIAL COEFFICIENTS.

TOWARDS the end of March, I communicated the following theorem to Sir William Rowan Hamilton :—

$$\text{Putting } s_0 = n_0 + n_3 + n_6 + \&c.,$$
$$s_1 = n_1 + n_4 + n_7 + \&c.,$$
$$s_2 = n_2 + n_5 + n_8 + \&c.,$$

where n_0, n_1, &c., are the coefficients of the development

$$(1 + x)^n = n_0x^0 + n_1x^1 + n_2x^2 + \&c.,$$

and n is a positive whole number;